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POULTRY MANAGEMENT ON A FARM

An Account of Three Years' Work with Practical Results and Balance Sheets

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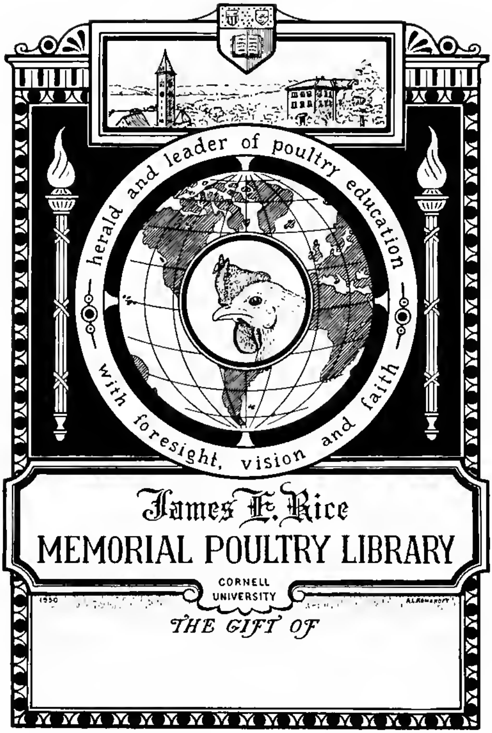
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POULTRY MANAGEMENT ON A FARM

PENS FOR PURE BREEDS

POULTRY MANAGEMENT ON A FARM

AN ACCOUNT OF THREE YEARS' WORK WITH PRACTICAL RESULTS AND BALANCE SHEETS

By

WALTER PALMER

M. P.

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Poultry Management on a Farm

Introduction

THE purpose of the following pages is to present in a brief form the actual working experience of treating poultry as a part of ordinary farm management.

The questions are repeatedly raised when discussing this subject: Do poultry pay on a farm? Why have so many failures occurred? If successful, how can it be done? What are the essential conditions? The review which I venture to present to the reader is the answer which my own experience has given me to these questions, and which I offer for the consideration of those who are interested. I make no attempt to discuss the general subject of poultry, a knowledge of which can be acquired from many well-known books.

My object is, by presenting the facts of my own case, to arouse an interest on the part of landowners and farmers throughout the country, who need not necessarily be acquainted with the many details relating to poultry. I suggest that the time for scepticism has passed, and that the time has arrived when the benefit to be derived from poultry farming should be regarded in a more serious light.

If it appears to the expert reader that I have given unnecessary details, I would mention that my record is intended mainly for the consideration of those who are not so conversant with the general subject of poultry keeping.

The Poultry Conference held in Reading in 1899, which was attended by experts and representatives from all parts of the country, showed that, although the difficulties of the subject are fairly well understood, there is yet much to be learnt on the question of the general management of poultry. A consensus of opinion, however, exists amongst the best authorities, and at the present time well-known principles are taught. The course pursued in my own case offers, I think, no exception to the general teaching.

During the last ten years a great amount of information on the subject has been disseminated by lectures arranged by County Councils in most of the counties in England. These lectures have undoubtedly created interest, and have resulted in a great increase in the number of poultry kept in this country.

Some of the Colleges whose agricultural departments are subsidised by the Board of Agriculture, have been teaching to the rising generation of farmers, poultry work as a distinct element in farming. Being connected with one of these Colleges, my desire has been to put this teaching to a practical test, in order to ascertain, with a view to publishing my results for the benefit of others, how far it is possible to carry out successfully the keeping of poultry on a farm of about 200 acres.

I selected for its management Mr. G. E. Parham, the son of a well-known farmer of North Dorset, who had obtained his Diploma of Agriculture at Reading College, where he also went through one of the regular courses in Aviculture. I am indebted to him for the successful manner in which he has applied practically the theoretical teaching which he had acquired. He has supplied me throughout with the whole of the details and the most complete information, and in such a way, I venture to think, as justifies the contention that Agricultural Colleges should be made much more use of by the younger generation of farmers.

There are in this country more than 90,000 farms of between 100 and 500 acres. That which I have found to apply in my own case surely should apply to very many of these, viz., that poultry worked as an adjunct to other branches of farming pays well, when properly undertaken, and should be treated as part of the income upon which the farmer can rely.

But there are many prejudices to contend with. It is almost a superstition that the wily fox renders chicken keeping impossible. I shall endeavour to show that, under systematic management, poultry can generally be afforded protection against this enemy, even in a fox-hunting country. Then again the idea prevails, when any great number of poultry is suggested, that they must necessarily be crowded together. Crowding, in the case of poultry, as in the case of all animals, naturally leads to disease, but experience has by this time shown what is expedient and what is possible.

My own observation, however, leads me to think that the greatest difficulty in most cases will not be those matters which are fully dealt with in the various works upon the subject, but the marketing of produce, or, in other words, a proper return on the credit side of the balance sheet, which is essential if a profit is to be made. Upon this question I venture to express my views.

As with stock, or any of the elements in farming, there are three principal considerations on the expense side of the account. These are wages, food, or that which is consumed, and rent. A farmer, or the manager of a farm, has necessarily a knowledge of stock and the crops which must be grown. He employs a herdsman, or carter, to carry out the routine work of every day. So in the case of any one wishing seriously to run poultry as a part of the business undertaking of his farm, a knowledge of poultry keeping seems to be equally essential, otherwise he is entirely in the hands of his poultry man. The farmer has not the time to do the labouring work of attending to the poultry, and consequently he must employ a poultry man.

The younger generation of farmers may have acquired the necessary knowledge. But it is not surprising that the old-fashioned farmer, who from time immemorial has delegated the care of poultry to his wife, and allowed her the profit as " pin " money, should be conservative, and regard with doubt the statement that poultry will not only pay handsomely in themselves, but also be of distinct value on the farm.

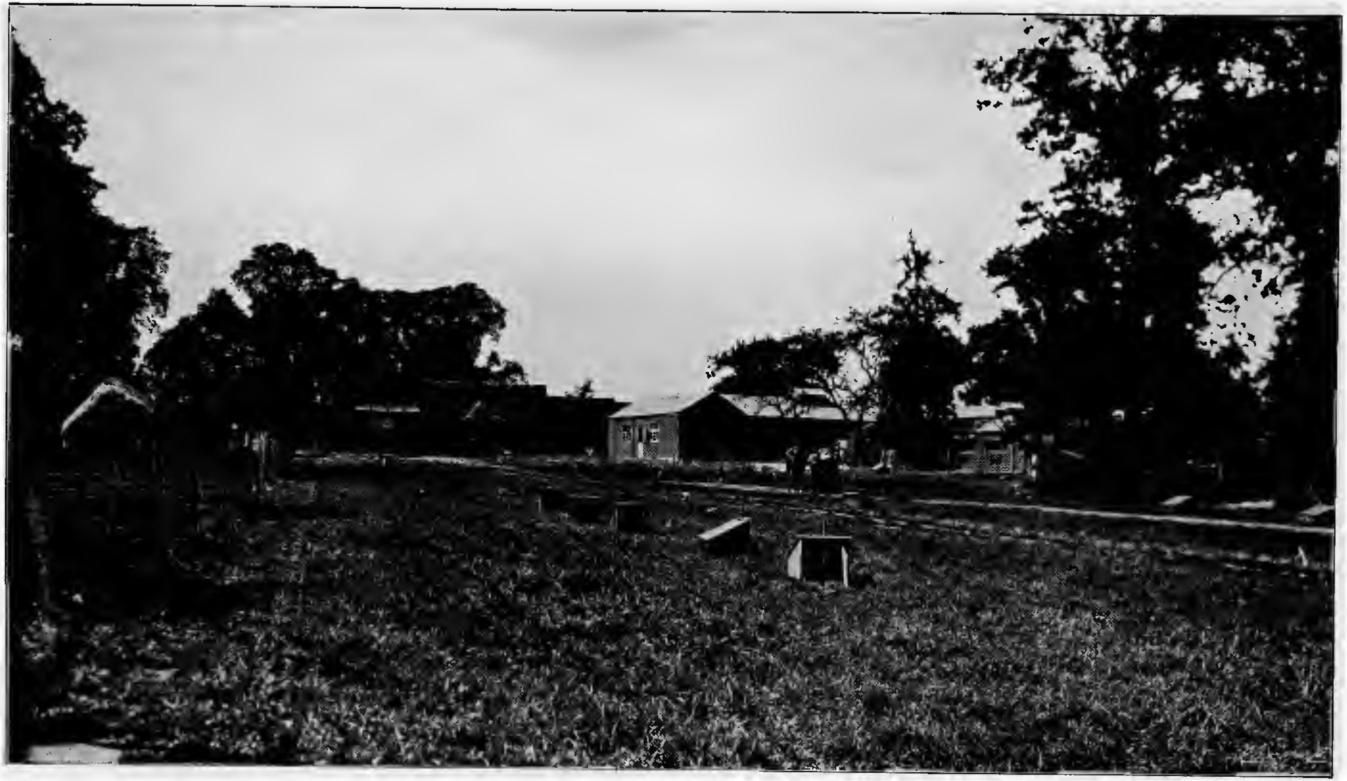
My endeavour in the following pages is to demonstrate these facts in my own case. I know that there are many similar instances of equally successful endeavours. Perhaps others may be led to produce proof of a similar character, with the result that in the future poultry may be treated in the agricultural world as being in many cases an essential part of the work of the farm, producing a corresponding increase in the income of the farmer.

SUNNINGHILL,
BERKSHIRE.

General Description of the Farm

“ KILBY’S ” and “ Crouch Lane ” Farms, in the parish of Winkfield, Berkshire, comprise altogether about 220 acres. Each farm is of about the same size, and the homesteads are separated by nearly a mile. The soil throughout is a fairly stiff clay, and this for poultry offers many disadvantages. It is wet and cold for chickens in the winter, and, as the general aspect of Kilby’s Farm is north, it would not be selected by any one intending to carry out poultry farming as the most favourable for the purpose. Otherwise the conditions are suitable. It is essentially a dairy farm, consisting for the most part of pasture, but with arable fields conveniently situated near the homestead. The advantages are that on a farm of this description there is an abundant supply of natural food, more especially in the spring and autumn, and the herbage is distinctly better than on poorer lands.

The original buildings of Kilby’s Farm date back more than 200 years, and are of the old-fashioned description, built of solid oak. As the antiquity of these made it necessary to construct new buildings for the cattle and horses, the old ones serve most conveniently for the various purposes connected with



APPROACH TO KILBY'S FARM, SHOWING THE OLD AND NEW BUILDINGS

poultry. One is used for the fattening pens in winter time, another for plucking and trussing, other parts serve as a carpenter's shop, food store, and storehouse for coops and appliances when not in use.

The poultry man lives in a house about 300 yards from the homestead, near some of the grass fields, where he obtains a good view of that part of the farm which is particularly devoted to poultry. The fields are old pastures, and along the hedgerows occasional elms and oaks afford good shade for the birds. An orchard has been planted near the farm buildings, as additional shade and shelter for the younger birds.

The second farm, " Crouch Lane," has a yard of the ordinary description, surrounded by wooden buildings, which provide throughout the whole year a home for the laying hens, as they require less attention than the young chickens and fattening birds. Thus we have endeavoured to make the best of our conditions, and, as far as possible, disadvantages of position and soil have been minimised. But it will be observed that the farm is not especially suitable for poultry keeping, and any success we have achieved has not been due to exceptionally favourable circumstances.

Breeds of Poultry

POULTRY, like cattle, must be more or less selected in accordance with soil. The stiff clay, with the situation facing so severely to the north, obliged us to experiment with about twenty varieties before we were satisfied which were best. We tried both pure breeds and crosses. As a principle, it is, I believe, universally conceded that the first cross produces the best birds, both for the table and for laying, and we had to discover which were the best breeds for each of these purposes. Experience has led us to select for table birds Indian Game crossed with Buff Orpington, with which cross we have taken many prizes at various shows, including the Smithfield Fat Stock and the Dairy Show. For general purposes and egg production, we have chosen Brown Leghorn crossed with Buff Orpington, the cockerels of this cross making good table birds, and the pullets good winter layers and sitters; the chickens, moreover, we find to be exceptionally healthy and grow rapidly. We have, therefore, three pure breeds to maintain for stock. Undoubtedly other breeds are suitable for our locality, but we consider these three the best. It is interesting to know that in each of the crosses named, the male bird has yellow flesh and legs, and

POND RESERVED FOR STOCK DUCKS

the most reliable authorities state that the races of poultry which are most suitable for heavy soils are those with yellow flesh, by reason of their greater vigour. These would be inferior for table purposes especially, but by crossing the Indian Game on to the Buff Orpington, which latter has white flesh, we secure the great size and vigour of the former, and the majority of the chickens are found to retain the flesh colouration of the female parent. On the other hand, the undoubted good laying qualities of the Buff Orpington are increased by crossing with the Brown Leghorn, which is a very active fowl, and a prolific egg producer.

In order to meet the enquiries received for sittings of eggs of other breeds, we also keep a certain number of Plymouth Rock, Faverolle, Minorca, Golden Wyandotte and Ancona.

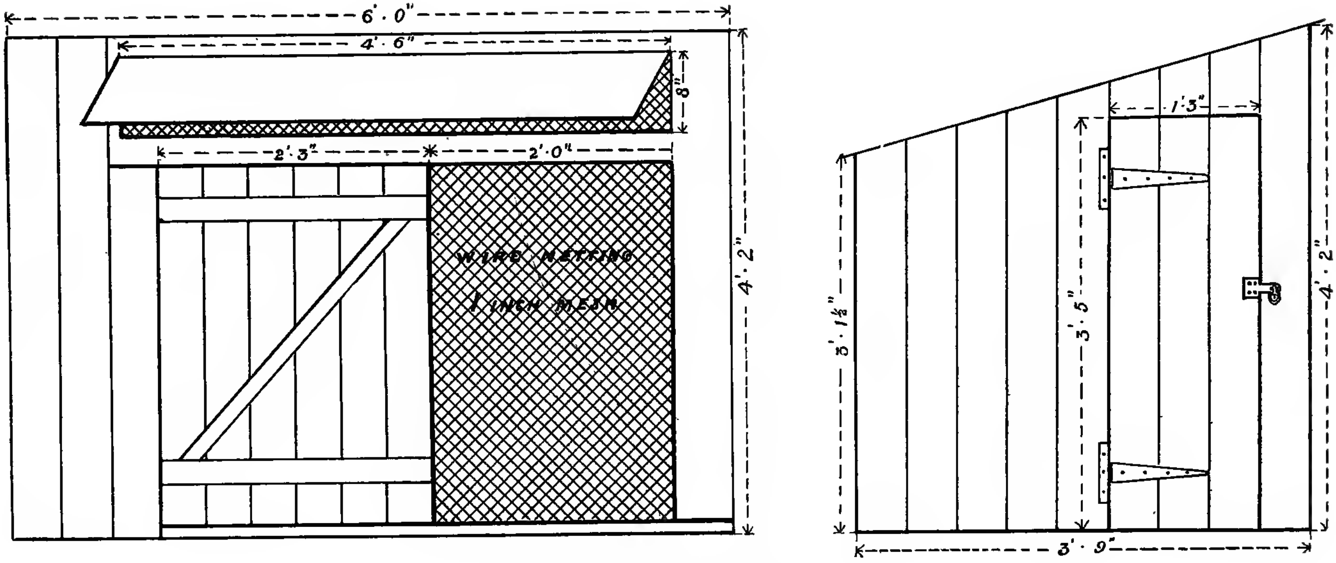
Ducks

FROM the balance sheets it will be noticed that we have a certain number of ducks, and I may therefore briefly state that the few which we keep are of the pure Aylesbury breed, our stock consisting of about twelve ducks and three drakes. Ducklings are hatched under hens.

Management

MUCH depends upon the selection of a good poultry man. He must naturally be fond of poultry, interested in his work, and not afraid of the hours. Compared with all other labour on a farm, good wages have to be paid. If poultry keeping on farms is taken up, as I trust it will be, by farmers, a splendid opening is afforded for intelligent young labourers. At present there is undoubtedly some difficulty in finding capable men. In the case of the carter or the shepherd, on a farm, he is, as a rule, the son of one who has followed the same vocation; but for poultry keeping, being a new occupation, we have to seek the individual. The present difficulty will partly be overcome by the efforts of the County Councils in teaching the management of poultry, though it is unfortunate that up to the present most of the students receiving instruction in this subject are of a distinctly higher social grade, whether men or women.

But what applies to the case of poultry equally affects farming generally, viz., that elementary teaching in strictly rural districts should conduce to a taste for agriculture. This can only be effected by a certain number of teachers in elementary schools being given the necessary training, for which ample opportunity is now afforded. An



NEW TYPE OF MOVABLE HOUSE

intelligent boy who is allowed to help on a farm will soon acquire the necessary knowledge, with corresponding benefit to himself afterwards.

Our poultry man is assisted by another man, who devotes the whole of his time to feeding and the general work. We have also a boy who assists on Saturdays and after school hours. The poultry man's wife is paid separately so much per head for plucking.

As shown by the balance sheet (Appendix I), the total number of birds at Michaelmas 1901 was 2,018, but the maximum number during the year is attained in July, after which, until November, the stock diminishes as table birds are killed. This number, which in July 1901 reached about 2,700, appears to be the utmost that our present staff can attend to, together with the making of houses, coops, and appliances.

Their occupation during the day is, firstly, the unlocking of all the houses, and feeding, which takes about two hours. The afternoon feeding occupies rather less time because of the difference in the food. Locking up at night another hour and a half. During the day some of the houses are cleaned out, each house being cleaned once a week, and the droppings are collected for use on the arable land. Watering occupies in the summer even more time than the feeding. Trussing takes about five minutes per bird, and this generally occurs on two or three days in the week, when twenty birds or more, according to the orders, may have to be killed and trussed.

Houses and Appliances

THE structures for housing poultry are of many designs, as can be seen by the advertisements in the various books, of which, in Appendix V, I give the names of some of those which are the best known.

The type of house which we commenced with is shown in the illustrations on page 29. This, however, we have ceased to make in preference for that shown on pages 25 and 33. The particular feature of the new house is the free ventilation in the form of a sliding shutter, which also allows sunlight into the house, and enables the admission of air to be regulated during colder weather. All our houses have floors, for the following reasons. Our observation is that it is wasteful to allow droppings to pass on to the ground, and decidedly better to collect them at least once a week for putting on the arable land. If too much fell on to the pasture direct, it would moreover tend to taint the grass, and that evil is avoided by the adoption of a floor to the house. But another reason is that without a floor the lower structure of the house must rest on the ground, and consequently soon becomes rotten. The house is also less draughty, and the floor lessens the chance of birds getting cold during cold winds, which leads to roup. The floor

A COLONY OF PULLETS—FIRST CROSSES FOR LAYING PURPOSES

also facilitates the mounting of the houses on wheels, which is necessary for their easy removal.

Two houses of this type, during the winter time, can be placed 12 to 15 feet apart in line, and a temporary roof of boards made from one to the other, with corresponding boards to form a back. The result is a temporary shedding under which the birds can obtain shelter in wet weather; such an arrangement can also be utilised as a protection from foxes during foggy weather, by closing the front with wire or otherwise.

The number of movable houses on the place at present is forty-two, accommodating about twenty or thirty birds each. The number of coops is ninety. All the houses and coops have been constructed on the farm by the poultry man, and are made of $\frac{3}{4}$-inch match-boarding; the roofs of the coops are lined with felt. A kind of tar called "carbolineum avenarius" is employed for staining the outer woodwork.

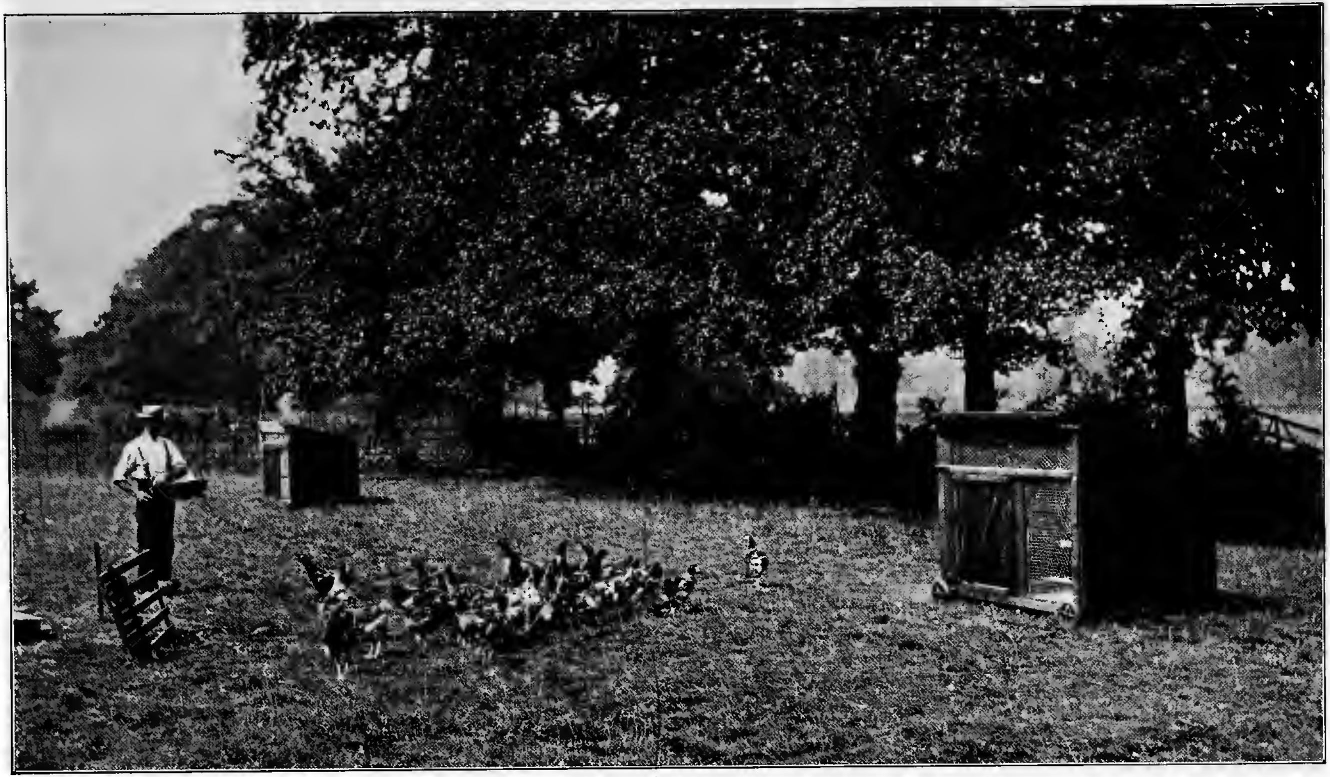
In the illustration on page 37 is shown a very simple device for shading the water in the summer time, and for preventing the cattle from drinking that provided for the poultry.

For the purpose of bringing up young birds during the winter, Mr. Parham has designed the special house shown on pages 41 and 45. This house is 80 feet long by 12 feet wide and 10 feet high in the centre. It has a brick foundation, and the floor, to which great importance is attached, consists of brick ballast, one foot in depth, covered by four inches of dry road scrapings, and this again, when the house is in use, is covered with pea haulm chaff. At one end is the incubator room, measuring 8 feet by 12 feet, in which are four incubators, three Hearsons and one Tamlin, both on the hot water system. One incubator holds one hundred eggs, two fifty, and the other twenty-five. A series of shelves surrounds the room, where eggs are placed ready for incubation. In the rearing house there is a walk up one side, and it is divided into five divisions by wire-work, an opening at the side of each division affording a run to an outside wire enclosure. Each of these divisions is provided with a foster-mother accommodating about forty chickens, and has the usual oil lamp in the centre.

Generally speaking, the birds in the first division are one week old, after which they move to the next division, and so on, until, when five weeks old, the weather permitting, they are taken to one of the movable houses in the fields.

Where on a farm a shed is available for the purpose just described, it might not be necessary to plan such a house. Mr. Parham's house has certainly been most successful, and I strongly recommend its design to the consideration of those interested.

Foster mothers as well as coops are used in the fields, and are of the ordinary hot air type; they are made in two parts, the one where warmth is generated by an oil lamp and having a warmly constructed top, the other half having a simple roofing,



A COLONY OF COCKERELS—FIRST CROSSES FOR TABLE PURPOSES

and wire work along the front side only. Each foster-mother holds about forty chickens. The reason for selecting those on the hot air instead of hot water principle, is because they are more easily made on the premises, and when tested against others gave equally good results.

General Arrangement of Poultry

THE general principle adopted is to retain around the homestead or poultry man's house the pens of pure-bred birds, of which there are eight, and in each of which there are six to ten hens and one cock-bird.

In certain houses in the fields are colonies of birds, consisting of twenty to thirty hens of one breed and two to three cocks of another breed. The eggs from each colony are marked, and produce, when hatched, the cross-bred birds, either laying hens, or birds for table purposes. It is our experience that chickens hatched from eggs laid by hens at liberty are stronger than those from birds in pens. The eggs for incubation, whether pure or crossed, are respectively marked. Hatching commences at the end of October or the beginning of November, so that the chickens produced at the end of the year may be ready for killing as spring chickens in March and April. It is during the autumn and winter months, when hens are not broody, that we derive the greater benefit from incubators and foster-mothers, and the chickens during these months thrive better under foster-mothers than under hens. In the spring and summer time, hatching by hens is preferred. For this purpose an enclosed shed is employed, divided into two parts, in each of which there are thirty nest boxes placed on sand. The hens are liberated once a day, ten to fifteen at a time, and they are then fed on whole corn, wheat or maize, and free access to a dust bath is afforded. A sliding shutter prevents their return until the arrival of the poultry man, who sees that each bird again occupies her own nest.

From February to May every sitting hen and incubator is employed, in order that the pullets produced may be ready to replenish the old stock, and come on as winter layers. All hens which are two and a half years old are sold in August and September before they commence to moult, and realize about one shilling and sixpence each. Hens, therefore, which are hatched in the spring should be laying birds for two autumns and two summers, after which they cease to be of profitable use. Consequently, chickens hatched in the spring of 1900 will be sold as old fowls in August 1902.

Only a few eggs from the table crosses are hatched in the spring, as the supply of table birds during the late autumn can be maintained by the surplus obtained from the laying and general purpose breeds.

LARGE PENS FOR OBTAINING EGGS FOR CROSS BREEDS

Most of the cockerels are killed before Christmas, after which time the supply of table birds for killing is obtained from the pullets, which offer the advantage that they can be kept for a longer period than cockerels without becoming coarse.

Chickens hatched in the autumn and early spring are placed in the chicken-rearing shed, as shown in the illustrations on pages 41 and 45. When two to three months old, they are removed to some warm house in a dry sheltered spot facing south, to which is attached a covered run. When young chickens are thus moved a foster-mother is provided inside the house, but for older chickens a lantern suspended in the house provides any additional warmth that may be necessary.

In March the chickens when hatched are placed direct in the fields in either foster-mothers or coops, as shown on pages 53 and 73. Each of our coops has a detachable boarded floor, for the double purpose of keeping the chickens off the damp ground and preventing rats attacking them during the night.

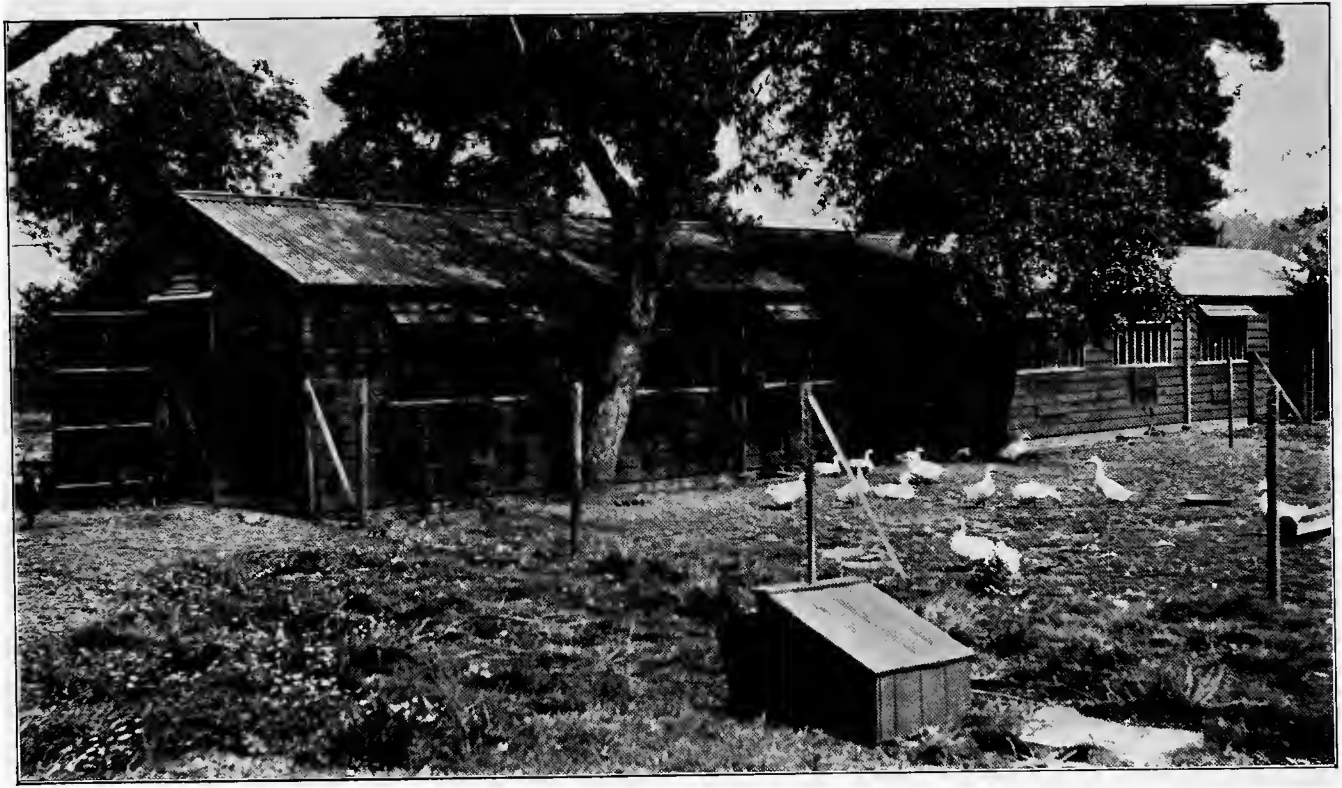
Following this stage in their life, and when two to three months old, the chickens are taken from the coops and placed in lots of about twenty in movable houses on the pastures, where for the first few days a wire run is attached to each house, to which the chickens are consequently taught to return of their own accord. At this particular stage the cockerels are separated from the pullets.

One meadow is reserved each year for the foster-mothers and coops, for which in our case two or three acres are necessary.

It is in connection with this part of the arrangement that one of our difficulties arises. These small birds, scattered over such a comparatively large area, easily become a prey to rooks, so that the part selected for this purpose must consequently be near the farm buildings, where some one is continually at hand.

The portable houses occupy during the spring and summer about thirty-five acres. Each one is shifted a few yards in position every week, partly to prevent any tainting of the ground around it, and partly to prevent killing the grass underneath it. In the winter time, it is more convenient to collect the houses somewhat nearer together in proximity to the homestead, which lessens the labour and enables the birds to shelter under the ricks; moreover, during this time of the year the birds derive little benefit from being scattered. The method of moving the houses is by affixing a chain from a ring on the front of the house on to the back of a cart, for if a horse were to pull the house direct, the consequences might be serious when going down hill. During the summer time the number of birds per acre works out at about forty. Cattle and horses graze at the same time amongst the poultry. Hence it will be seen that the land is not completely occupied by the fowls.

In our opinion it is extremely doubtful whether



HOUSE FOR INCUBATORS AND CHICKEN REARING IN WINTER

the ground would within a very long time become at all contaminated under this arrangement, especially as the droppings in the houses, as has been already pointed out, are cleared each week. After harvest, too, for a month or more, most of the fowls are placed on the stubble. Not a grain of corn seems to escape the chickens, and the number of worms and insects per acre must be considerably lessened. Often for the whole of this time no food has been supplied. In these days, when the self-binder is so essential for saving labour, much more grain is lost on the ground than was formerly the case. The whole of this is recovered by the employment of poultry. The profit thus derived would otherwise be lost; wild birds would have eaten it. How far the land, moreover, benefits by the fowls eating the various grubs it is difficult to say; at all events, we have a corresponding saving in the food account. Dr. Fream states that it is calculated that each acre of ordinary agricultural land contains about 50,000 earth worms, which in theory help to fertilize the soil. There must surely, therefore, be many as a share for poultry. When poultry are employed on a farm in this manner, why is it that flocks of starlings or rooks are rarely to be seen?

A great deal of controversy undoubtedly exists with regard to the benefit or harm which poultry are supposed to do to pastures. If a large number exist on a small acreage the land is worth nothing for grazing, and therefore the rent is chargeable to poultry. But when poultry are scattered over a large area, not only is the bill for food correspondingly lessened, but the grass grown as the result of manure received, in our experience, more than compensates for the consumption of grass by the fowls, which cattle would otherwise have eaten. It is a matter of common observation that cows prefer the more rapidly growing grass which always follows around where the houses have been. The same fact applies in the case of horses. It seems to be a law in animal life that the fodder most preferred by any one animal is that which results from the effects of another, and, if this is so, a certain number of poultry must in their turn be of benefit to other animals. Animals of different kinds always graze better together than only one kind. The poultry manure is collected from the houses and mixed with yard manure for use on arable land.

We have already alluded to the loss of some chickens by rooks. Rats and weasels, however, give more trouble, for they miss no opportunity of visiting foster-mothers and coops at night, and frequently, during the day, catch the smaller chickens in the ditches. The only possible remedy seems to be to catch them in traps or to shoot them. In our case, with so many old buildings and banks, we resort to continual ferreting ; indeed, ferrets are a most necessary adjunct to poultry keeping.

Foxes arc far more easily managed. On the farms referred to, which are in Mr. Garth's country, and

INTERIOR OF INCUBATOR AND REARING HOUSE

near Windsor Park, on very few occasions has a fox enjoyed himself, and a thick fog was then generally the cause. In four years not a dozen birds have been taken. All fowls are securely locked up at night. The light from the lamps in the foster-mothers placed in the fields partly serves to frighten foxes away, but best of all is the simple device of running a wire across the fields, along which a good watch dog can slide his chain, giving all the appearance of freedom as he paces up and down.

Fowls are so accustomed by habit to return to the particular house in which they roost, that should the house be removed more than a few yards, they will assemble at night on the spot where their house used to be. When, therefore, a house is moved more than twenty to thirty yards, it is advisable to fence in the birds by a wire enclosure for a few days until they become accustomed to the new position, otherwise if they are left out they will become a prey to the fox. When young birds are placed in a field for the first time, a wire enclosure around the house soon renders them familiar with their new abode.

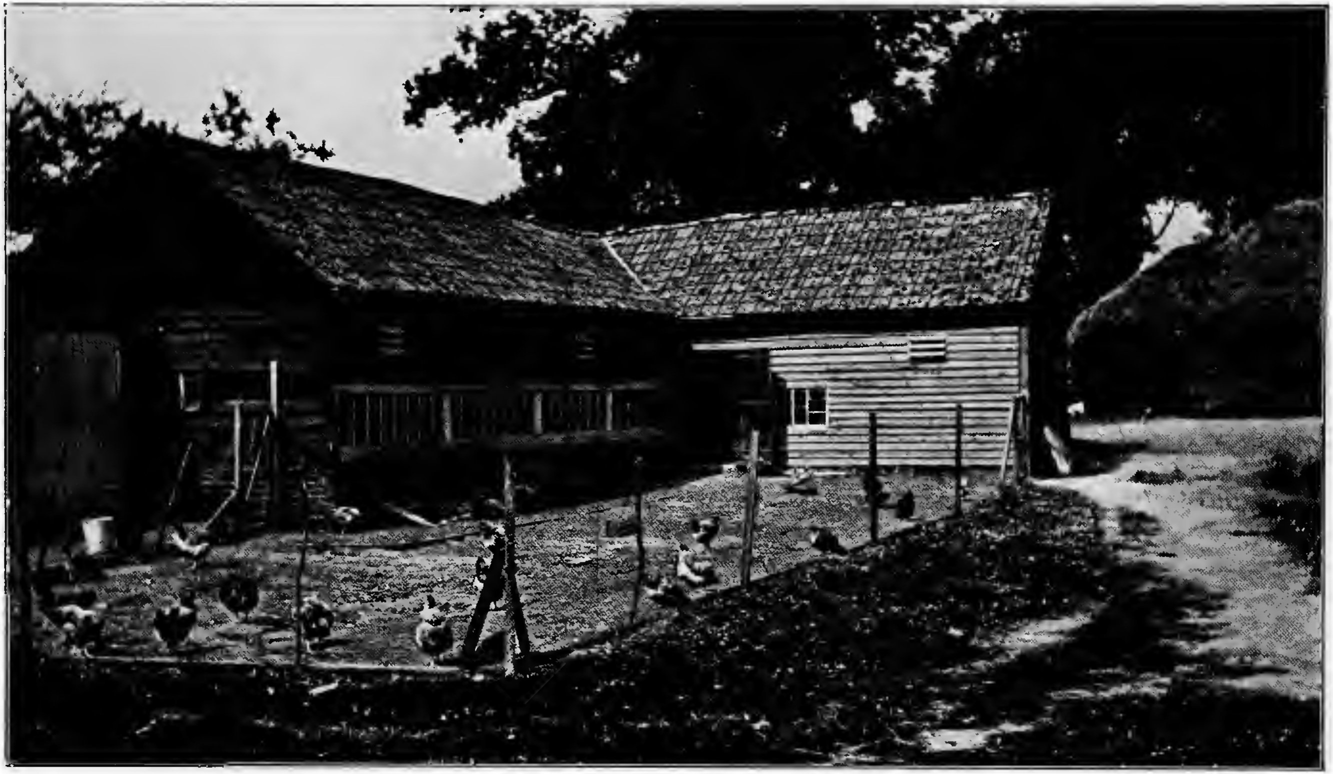
Feeding

THE problem of feeding is one of great importance, as upon it depends, to a great extent, not only the general health of the birds, but the economy which promotes success. It comprises almost a subject in itself, and I have therefore thought it well to give the fullest possible details of our methods, which are divided under the three headings :—

(*a*) Laying hens—in winter and summer.
(*b*) Chickens.
(*c*) Table Poultry.

Feeding of Laying Hens.—Commencing with the autumn, the following is the routine generally followed. In the morning, when the hens are first of all liberated from their house, they are given warm, soft food, consisting of vegetables, corn, meat, and meals. The following is the exact quantity of food given to seventy hens in pens on one day during the last winter :—

	d.
1 lb. Pea meal	1
3 lb. Biscuit meal	2½
1 lb. Maize, cracked	½
2 lb. Swedes	¼
1 lb. Potatoes	¼
1 lb. Meat	½
Total	5*d.*



HOUSE USED FOR SITTING HENS, PLUCKING, TRUSSING AND MARKETING PURPOSES

In the afternoon they receive ten pounds of wheat (costing about eightpence) which is distributed on the grass, but during hard frosts and snow it is scattered on their straw and in any available suitable manure, the purpose of which is to warm the birds in their endeavour to find their food.

Many forms of cookers have been tried, and we have found Parish's Steam Cooker to be the best, in that it not only does the cooking, but at the same time supplies hot water for the hens and young chickens during the winter. Coal and coke are used as firing during the day-time, and at night it is banked up by siftings from breeze, which is purchased from the gasworks at a cheap rate. Our method of cooking is to put first of all the vegetables, i.e., the potatoes and swedes into the cooker; the potatoes are put in whole, but the swedes are cut into slices. When these are partly cooked the joints of meat are added, and the whole is left to cook from 11 a.m. to 3 p.m. the day before it is required for use. At 3 p.m. the maize, which is found to answer best when cracked, is then added. We find that if the maize is placed in the cooker at the same time as the vegetables, it adheres to them, and prevents their becoming sufficiently cooked. The supply of meat is obtained from a horse knacker, but care is taken to see that no meat from a diseased animal of any kind is brought on to the premises. The price paid per carcass, which is delivered in joints, varies from ten shillings to one pound, and works out at about one halfpenny per pound. The bones can be parted from the meat when cooked, and the hard bones are placed in the fire for the purpose of charring, and are then broken by an iron bar, and when cold are given to the hens, who rapidly devour them. Softer bones ground into small pieces are fed to the younger birds. The pea and biscuit meal is mixed with the other cooked food just before feeding, which brings the mixture into a somewhat dry crumbly condition. Warm food and a supply of meat are considered most essential, in order to keep up the supply of winter eggs.

During the spring the pea and maize meal is lessened, and brewers' wet grains are used as a substitute, and in the place of swedes, mangels cut in half are given in a raw condition.

During the summer months the morning soft food is given cold, and the pea and maize meal altogether discontinued. The quantity of brewers' wet grains is increased, for we find that this is very suitable during the summer time when a bulky food satisfies the birds, without, at the same time, making them too fat. Short plump white oats are occasionally given in the afternoon as a change from wheat; and in very hot weather the wheat is steeped, a change which satisfies the birds, at a time when they are not able to find worms, and has also the further purpose of checking them from drinking too much water. During the last two very hot summers, when the

SUMMER REARING GROUND

birds have been unable to find worms, granulated meat has been given.

For birds in pens a supply of sharp flint grit is given, *ad libitum*, as only those birds which can wander round the homestead usually find sufficient from the constant wear and tear of the roads. Chalk, bone meal or old mortar are provided in such a way that birds have always free access to shell-forming material, which is especially necessary at the time of the year when most eggs are laid.

The soft food is served in wooden troughs which have a bar across the top to prevent the hens from standing on the food.

The rations of soft food and corn which we have given work out at about one penny farthing per bird per week, and adding to this another farthing for the grit and shell-forming materials, the cost per bird per week during the winter time amounts to about three halfpence. The amount for summer foods works out at a rather less sum, as the hens, during that time of the year, require a smaller proportion of concentrated foods, and the worms which they find take the place of the meat diet. After the corn has been cut, the birds are placed upon the stubbles and no food is given, as they entirely find their own.

For birds in pens, green food has of course to be supplied, but those at liberty naturally find sufficient for themselves.

Feeding of Chickens.—The feeding of chickens varies according to the time of the year, but it also depends upon their being either in a house, where everything has to be supplied, or at liberty, when they are able to find a considerable portion of their food in the form of insects, worms, and green food, and if near a road, the necessary amount of grit. The feeding also varies when the chickens are required for killing at an early age, as in the case of spring chickens, or when during the autumn larger birds are required for killing.

During the first twenty-four hours chickens receive no food, after which the first food consists of boiled eggs and bread crumbs and fine oatmeal, given in a dry crumbly condition. Infertile eggs from sittings or incubators serve very well for this purpose.

On the third day they receive, during the earlier part of the day, a little coarse oatmeal and boiled rice mixed with toppings, and at night-time broken wheat and silver-grey buckwheat, to which are added some fine oyster shells and sharp grit. This is continued until the end of their first fortnight, when meat is given once a day, and fine bone meal is mixed with the soft food. When chickens are in confinement they receive some green food once a day. The water, to which chickens of all ages have free access, is first of all boiled, and during cold weather is given to them warm in the early morning. Midday meals are varied, and consist of coarse oatmeal, biscuit meal or buckwheat; but the last meal is always grain in some form, oyster shells and wheat being sometimes mixed with the grain. Silver-grey buckwheat is the best kind of grain. Green food is used after the first week, but for the first few days is cut into very small pieces.

In the summer time grass takes the place of this green food, but in the autumn and winter mustard and cress or cabbage is used, care being taken to see that it is never in a frozen condition.

The general routine followed is thus as follows :—

At	6.30 a.m.	Coarse oatmeal (and meat for the older birds).
„	9 „	Scalded oatmeal, rice, bone meal and milk.
„	12.30 p.m.	The same.
„	4 „	Broken wheat.
„	8 „	Buckwheat and oyster shell.

It may be interesting to many to know the quantities of food eaten by chickens of various ages during a day, which was taken by Mr. Parham on February 9, 1900. The particular chickens were in the rearing-house, and received nothing beyond what was actually served to them by the poultry man.

No. of Chickens.	Age.	Bruised oats.	Rice, bone meal, oatmeal and milk.	Broken wheat.	Buck-wheat.
28	8 wks. 3 days.	11 oz.	14 oz.	10 oz.	12 oz.
32	6 „ 3 „	16½ „	7 „	5 „	6 „
23	2 „ 3 „	7½ „	2 „	—	—

Feeding of Table Birds.—Spring chickens are birds killed during the months between March and June, and are fed as already described, and are only from three and a half to five months old. They are then killed and sold without any further process of fattening.

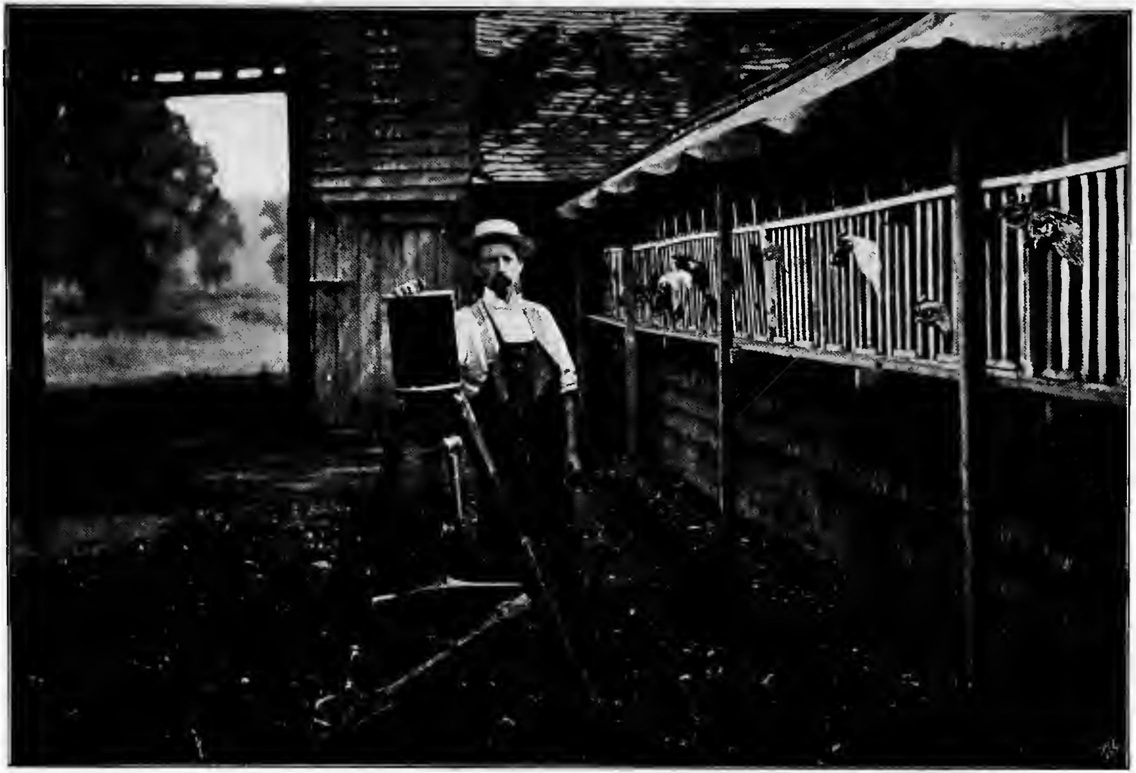
After the spring chicken trade in the month of June, birds intended for table purposes are, as far as possible, kept apart from those reared for stock, and are allowed only a limited run, for the purpose of preventing them becoming coarse and sinewy.

From June until the succeeding March, all birds for killing are placed for three weeks to a month in fattening pens, as shown in the view on p. 59; during the first part of which time their food is placed in troughs and consists of ground oats, toppings and skim or separated milk. During the latter part of this time the food is entirely supplied by the cramming machine, which is shown in the same view.

During the summer time these pens are placed in the open, but in the autumn and winter they are placed in a warm, well ventilated house. During the latter part of the time just referred to, the birds are crammed from ten days to a fortnight, but this length of time varies according to the market and the character of the individual bird; some birds requiring less time and others more.

The food in the cramming machine consists of ground oats, toppings, separated or skim milk, and a quarter of an ounce to half an ounce of fat per bird. The milk is previously scalded, and is always given sweet.

The following statement provided by Mr. Parham



SUMMER FATTENING PENS AND CRAMMING MACHINE

shows the quantities of food given to sixty-four birds on July 24, 1901, by means of the cramming machine. It so happened at this particular time no fat was being given.

	Milk.		Ground oats.		Toppings.
Morning feed, 8 a.m.	20 lbs.	...	12 lbs.	...	3 lbs.
Evening „ 4.30 p.m.	18 lbs.	...	10 lbs.	...	3 lbs.
Total	38 lbs.	...	22 lbs.	...	6 lbs.

Taking milk at fourpence per gallon, ground oats at one penny per pound, and toppings at three farthings per pound, we have a total :—

	s.	*d.*
Milk	1	4
Ground Oats	1	10
Toppings	0	4½
	3	6½

which works out at rather less than three farthings per bird per day, or tenpence halfpenny per bird for the fortnight.

Diseases

CLEANLINESS and absence of crowding are the main safeguards against disease. This principle holds good in the case of all animal life. In the case of poultry, there is consolation in the fact that the comparative worth of each individual is little as compared with cattle, sheep and pigs. There appears to be a simple rule, viz., to kill any birds which show symptoms and immediately bury them sufficiently deep to prevent contamination. If the poultry man knows his business, the consequent loss of capital should be small. He will rapidly discover symptoms of disease and by isolation and careful treatment will prevent its spreading. But on our cold clay land, it seems to be impossible to keep entirely free from outbreaks of roup in its various forms.

With early chickens we have been troubled, during the winter months, with cramp and leg weakness, the cure for which has been in providing more bone meal and in making the chickens scratch for their food. During the dry season of 1901, especially, lice have been a continual difficulty. Fattening birds, sitting hens, and young chickens when found to be attacked, are dusted with pyrethrum powder. This is a somewhat expensive method, and we have found it more effectual and cheaper, in the case of birds at liberty, to treat them with a mixture of paraffin and sweet oil, but care must be taken in applying this, otherwise the skin becomes blistered.

All the houses are systematically white washed and disinfected at least twice a year, and the perches are removed and thoroughly cleansed.

The disease known as gapes has given us very little trouble, evidently on account of the space occupied by birds and the constant change of ground. The few birds that have suffered from gapes were of course immediately isolated.

As a poultry keeper I wish, in connection with this question of disease, to express my thanks to the Board of Agriculture for the useful information dealing with this subject contained in the pamphlets which they have issued on external and internal parasites of poultry.

In the case of the more valuable birds and prize birds, it is generally worth while, on account of their value, to avoid killing, and by careful isolation and examination to ascertain what is the ailment, and then treat them accordingly.

By strict adherence to well recognized rules, we have been comparatively free from disease. In all the cases of disaster, of which one reads, some specific cause has been discovered, which in most cases might have been avoided.

Financial Results

THE poultry account on a farm can be eliminated with little difficulty from the general farm accounts. The labour employed is distinct from the other farm labour. Food grown on the place can easily be charged to the poultry account. It is only in regard to the pastures that they cannot be treated apart from the rest of the farm. So that here arises the question of rent of land. I believe, from what I have read and heard, that no farmer who has run poultry over pastures would think of charging poultry with rent, and for the following reason: it is purely a question of manurial value as against the grass eaten. I refer the reader to the excellent article upon this question in Chapter VIII. of Mr. Lewis Wright's *New Book of Poultry*, in which he gives the result of the late Dr. Voelcker's analysis of poultry manure. The night droppings of larger birds, as obtained and weighed, are stated to amount to about half a hundredweight a year per bird. Dr. Voelcker estimated this as worth £2 a ton, and states that it is "a much more concentrated fertilizer than the best description of ordinary farmyard manure." As our birds vary in age and size, the manure thus collected can be taken as worth on an average for arable land ninepence per bird per annum. For 2,000 birds this would equal £75 per annum, but that which the birds leave during the day on the pastures (as shown in Appendix III) amounts to much less than this.

Taking the rental of the thirty-five acres used by our poultry at £2 per acre, an extreme value, and charging the poultry with half this amount, the rental would only be £35, chargeable to poultry.

The results of Mr. Parham's investigations (as given in Appendix III) show that we may fairly reckon 70 lb. as the total average quantity per bird per annum, apart from small chickens.

We assume therefore a total average night and day of 56 lb. per bird for 2,000 birds of various ages, which equals, at £2 per ton, £100. I am told that some farmers consider that the cost of labour is sufficiently covered by this value, and therefore charge no labour to the poultry account. Our labour in the year ending Michaelmas 1901 amounted to £133 15*s*. 2*d*. A certain part of this was employed on the making of appliances, and must be treated as capital expenditure. Assuming that £100 was spent on management, if we adopted the plan sometimes advocated of balancing the value of manure against the cost of labour, and charged the poultry account with £35 rent, our profit in this year would have been £65 more than it is.

This question may however be considered from another point of view. On the principles usually adopted in valuations for compensation under the

Agricultural Holdings Act, it would perhaps be reasonable to take one-seventh of the cost of the purchased foods consumed, and in addition a similar proportion of the value of the home-grown wheat consumed. This on the figures shown in the balance sheet for 1900–1 (*see* Appendix I) would amount to over £28, an amount which, at any rate, suffices to cover any claim for rent in respect of the thirty-five acres over which the poultry run.

However the question of the valuation of the manure may be viewed, there is at least no doubt that it is fair to charge no rent, and that by charging the full labour, we cannot be accused of wishing to avoid in the accounts an item on which the profit largely depends.

As bearing on this point, I may refer to an analysis of dried poultry manure, made by Dr. Voelcker in June 1900, at the request of the National Poultry Organization Society, which is given in Appendix III, and I add thereto the result of some observations on the actual weight of manure produced, which have been carefully taken by Mr. Parham.

In Part III of the First Schedule of the Agricultural Holdings Act of 1900, no mention is made of poultry. It is a matter for consideration whether poultry should be included in this schedule, if, as I trust will be the case, the keeping of a considerable number of poultry on farms becomes general. Following the reasoning which I have given above as to manurial value, it would seem fair that poultry should be included with cattle, sheep, pigs, etc., and some allowance be made by the landlord to the outgoing tenant in respect of the food consumed by them.

We began to keep poultry systematically at the commencement of 1898. As already stated, we had to find out for ourselves the most suitable breeds, and the three years' accounts which are given show the manner in which the stock has grown, until this last year, when apparently no practical increase is possible without more labour and fresh appliances. This is very much the usual manner in which, commencing in a smaller way, success is attained with a large number of birds.

Provided, however, that any one intending to run poultry is thoroughly aware of the breeds likely to answer his purposes, I do not see why a start with a greater number should not be made. But here arises the question of capital, or what amount of money it is necessary to spend to secure a profit. If a person bought the whole of my plant as it is, he would have to pay the amount as given in my valuation.

My actual money expenditure is a little difficult to ascertain.

I commenced in 1898 with sixty birds, but at once bought other varieties to experiment with. The labour, then, and all along, has been divided between the management of the poultry and the making of appliances, so that each year we have been adding to the amount of capital.

I consider, therefore, that it is fair to adopt the usual practice amongst farmers, of taking the total valuation at each Michaelmas as representing the capital.

For the year ending September 29, 1899, the profit was £33 17*s.* 6*d.*, which on the valuation, £236 2*s.* 10*d.*, works out at 14 per cent. For the year ending September 29, 1900, the profit of £68 5*s.* 6*d.* on a capital of £399 12*s.* 10*d.* equals 17 per cent.

At the end of 1899 we constructed the incubator and rearing house, which has already been described, and which cost £150. In the balance sheet for the year is the item £20 for rent, which is the rent of this building together with the part of the old farm buildings, which in that year we began to use for poultry. This house represents, of course, capital spent on the poultry, but being permanent, rent on it is charged as on any other permanent building.

In the same way, the profit of the last year, £83 12*s.* 9*d.*, on the valuation amounting to £647 1*s.*, equals nearly 13 per cent.

The amount of profit obtained each year probably compares very favourably with the profit which any farmer would expect to obtain, from either dairy farming or any of the other branches of farming.

The smaller profit shown in the last balance sheet is perhaps due partly to the proportionally larger amount spent on foods compared with the number of eggs sold, and partly to the large increase in the value of appliances. The valuation of appliances has since the first year been made by Mr. Parham, who I always considered was quite as capable of making the necessary inventory as any valuer called in for the purpose. On this amount undoubtedly turns the question of profit as shown in the balance sheet, and we therefore give the inventory in detail (Appendix I), from which it will be seen that quite a low value is placed on most of the items.

The average price obtained for eggs during these three years has been :—

1898–1899	... ...	1*s*. 6*d*. per dozen.
1899–1900	... ...	1*s*. 0¾*d*. " ,
1900–1901	... ...	1*s*. 1½*d*. " "

The reason for the higher price obtained in the first year was that there being fewer eggs, the whole were sold to private customers. The increased number of the next two years necessitated selling a great number during the summer months wholesale to grocers.

It is interesting to note that the prices shown for 1899–1900 and 1900–1 are such as may be regarded as within the reach of poultry keepers in every part of the country where organization exists for rapid marketing of eggs. As an instance, the average price realized by the Whitchurch (Dorset) Depôt of the National Poultry Organization Society during the year ending September 30, 1901, was 1*s*. 1¼*d*. per dozen, which fact proves that the profit realized at Kilby's Farm is not due to exceptionally high returns.

But another and more serious reason for the lower average prices obtained has been in the fact that we have had two exceptionally dry summers, which have much diminished the winter laying, when, of course, the highest prices are obtained. The average price must of necessity depend on the proportional number of eggs obtained during the difficult months of the year.

This same dryness of seasons has also affected the items relating to food in the accounts. For a considerable period the birds in the fields were entirely dependent on food given to them, much to the despair of the poultry man, whose work was at once lessened by every welcome shower of rain. In fact, the intense dryness of the summers has seriously contended against the margin of profit.

The average price obtained for dead poultry during the three years has been respectively, 3*s.* 3*d.*, 3*s.* 2*d.* and 3*s.* 5½*d.* per bird. The increase in the last year is entirely due to the employment of the cramming machine. The price per pound for many of the crammed birds has been a shilling, the birds often weighing four to five pounds when plucked and trussed.

The balance sheets shown are part of the audited statement drawn up for me each year by Mr. Francis H. Wright, F.S.A.A., of Reading, and are subject to any further examination which an interested person may desire to make.

It has often been asserted that poultry can only be made to pay when the principal items of cost are, for the most part, avoided. Obviously, in the case of a cottager, who keeps either a pig or a few hens which roam in his garden or the adjacent road, neither labour nor rent enters into his account. The food is supplied either from his house or garden. His profits should be comparatively large, and in the case of poultry and eggs, this income will depend partly on the prevailing prices, and partly on his care and his knowledge of the subject. His capital involved is insignificant, for the pigsty or poultry house is roughly constructed by himself.

But when we come to the case of a farmer keeping a number of pigs, the question of labour, food, and rent or interest, at once arises. As a set off against these, he has the income by sales and manurial value. Precisely the same reasoning applies to poultry.

Why, therefore, have poultry in the past been neglected by farmers? There seems to be one obvious answer. In the past, and generally throughout country districts, the sale of both poultry and eggs was limited. Eggs are a perishable article, the sale of which ought to take place at least every other day. Such a proceeding did not fit in with the economy of farming and with the usual practice on the part of the farmer, of going to market once a week.

The question of egg production is a comparatively new feature, brought about by two new and distinct conditions, which farmers have not yet learned to appreciate.

Firstly, the enormous demand for both poultry and eggs which has sprung up during the last ten to fifteen years.

Secondly, the fact that in order to meet this demand entirely new methods are necessary, and that the old-fashioned country idea of selling eggs on a market-day, once a week, is absolutely out of the question. I venture to suggest that it would be futile to recommend to farmers the keeping of poultry, the only purpose in which is to make money, without at the same time pointing out on what the sales in the market depend. The inundation of England by foreign eggs is due to the organization which exists in foreign countries, assisted in some cases by their Governments, whereas in England we have now, on our own initiative, to form the necessary commercial organization.

I suggest, therefore, to those farmers who may read this book, that poultry keeping in its modern meaning is really a new undertaking; that years ago a limited market existed, which has now grown into a vast problem affecting agriculture; that the knowledge and appliances are at hand which enable them to meet the demand and make large profits by doing so.

But one condition is essential, that old methods and ideas must give way to the new, and that competition can only be met by methods absolutely up to date.

The balance sheets which I give as the result of nearly four years' careful work are published for the

SUMMER REARING GROUND

purpose of proving the fact that the information and experience now possessed, shows that poultry management on a farm is a practical question, and that, if a proper method of marketing is adopted, it ought to yield a large profit.

I am aware that from the point of view of the tenant farmer, it may be urged that the amount of capital shown by my accounts is a serious consideration, even when made to yield 13 per cent. profit. But the capital value would be accumulated gradually from year to year, and if a farmer is persuaded to try systematic poultry keeping, the necessary expenditure would be no greater on poultry than in purchasing a certain number of cattle. His return on money spent on cattle will probably not be so great as on an equal amount spent on poultry, together with the necessary appliances.

The poultry, moreover, occupy for most of the year the same ground as the cattle, and if not more than forty to the acre, make very little difference in the grass consumed. I have already stated that in our opinion the good done to the pastures more than compensates for the grass eaten by poultry. The necessaries for starting poultry are a tenant's expenditure, and at the end of a tenancy he should lose no more by the sale of poultry stock and appliances than he would by the sale of other stock and appliances on the farm.

The Problem of Marketing

THE question of marketing is extremely complex, and I propose only to deal with the two aspects which relate to these pages.

Firstly, the supplying of produce in a neighbourhood such as exists around us.

Secondly, the organization which is being promoted to provide a market for remote districts.

In each case the principle is the same, that a good credit established by delivery of absolutely fresh eggs is essential, if the best prices are to be obtained.

What is a fresh egg? Definition is difficult; but the best suggestion is probably that for the purpose of marketing, an egg must not be more than three days old in summer and five days old in winter. Deception as to the age of eggs and the mixing of them with those from abroad, has been detrimental to much of the trade in eggs throughout England.

The surrounding neighbourhood takes the whole of our supply. We stamp each egg with letters, denoting both the farm and the date. Any person, therefore, can read by the date how many days old it is, and in the kitchen the cook can always select those of prior date for first use.

From the business point of view, the object of a farmer is naturally to get the highest possible prices for both poultry and eggs. With regard to poultry, the likes and dislikes of individual customers have to be considered; some prefer the fattened poultry trussed, and some not trussed. The best prices undoubtedly are obtained by supplying private individuals direct. This we do so far as possible, but a connection with some retailers must always be maintained in order to find a sale for eggs during the summer months.

I pass on, however, to the other aspect of the question which affects equally those who, such as cottagers, have comparatively few eggs, or the farmer to whom this book especially appeals, and who should offer for sale his twenty to thirty thousand eggs a year. It is this problem, which in Ireland the Irish Agricultural Organization Society has been solving, and which in England the National Poultry Organization Society is commencing to deal with.

Her Royal Highness Princess Christian of Schleswig-Holstein, who in 1898 honoured the National Poultry Organization Society by so graciously becoming a member of the Executive Committee, and who is also President of the Windsor and Maidenhead Branch of that Society, has by her sympathy and interest done much to draw widespread attention to the work which is now being carried on.

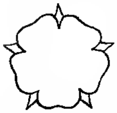
In country places, neither the farmer nor the cottager is in a position to sell to the retailer to the best advantage. There must be some medium, who is in a position to find the best market, and see that both poultry and eggs are despatched in accordance with the peculiarities or exigencies which are always met with. If the higgler steps in, he works the trade to his own advantage, the credit for supplying to the consumer eggs that are fresh is no part of his business. During the autumn and early winter higglers and dealers destroy confidence in home produce by mixing foreign eggs with English, with the result that prices obtained from retailers are much lower than ought to be the case. This system is almost universal, and farmers often spoil their market by keeping eggs in the summer for autumn sale without revealing the fact to their customers.

If the best price is to be obtained in the country districts, it must be on the lines followed so successfully by Denmark and other countries. The N.P.O.S. are therefore endeavouring to form, wherever possible, branches of this Society, which shall become collecting depôts, worked on an independent business footing.

The plan adopted is as follows: Where desire is manifested in any locality, a meeting is held of farmers and others interested, at which the objects and methods of the Society are explained, and when the conditions are favourable, a committee is formed and a secretary appointed. The first object is to ascertain the number willing to combine, and whether the conditions existing in the neighbourhood, with regard to the poultry and supply of eggs, warrants the formation of a depôt. In some districts it is found desirable that a branch shall be established for a few months prior to the opening of a depôt, in order that the stock of poultry kept in the district shall be increased or the quality improved. But this entirely depends upon the way in which poultry keeping has been developed. The capital necessary for the working of a depôt varies from £20 to £50 or more, according to circumstances.

Every person sending eggs to the depôt must be a shareholder, and obey the rules of the Society. On this condition the depôt is recognized by the N.P.O.S., and is allowed the use of the trade mark, to which I shall presently refer. The limit of interest paid on the capital must not exceed 4 per cent., beyond which the profits are divided in accordance with the value of the eggs and fowls delivered. The question of payment of the secretary or manager of the depôt depends on the particular circumstances. All eggs belonging to each member must be delivered or collected at least three times a week, and when received are paid for or credited, according to the current price of the day.

A collecting depôt having thus been formed, the N.P.O.S. aids it principally in two ways.



Firstly, it grants the use of its trade mark, the Rose, which may only be branded on each egg at the depôt after it has been tested and proved to be "New Laid," together with a letter denoting the depôt. Before each egg is delivered by the producer it is stamped with his individual number, so that the origin can be traced in case of need. The date, or private mark, is also affixed. The Rose Brand, together with the marks as described, for which an indelible ink is used, is a guarantee to the buyer that the egg is English, and that under the rules of the Society it is a fresh egg. Should any infraction of the rules occur, the consumer of the egg is invited to inform the secretary of the N.P.O.S., 12, Hanover Square, London, W. On the event of a second occurrence, the right to use the trade mark may be withdrawn. Any re-marking of the date on an egg is rendered impossible by this system, and it is hoped that it may soon be possible in all larger towns to purchase, without fear of fraud, absolutely fresh English eggs.

The Society has so far established twenty-seven branches, of which eighteen have depôts, the majority of which are worked on co-operative lines. During this last year sales have amounted to three-quarters of a million eggs. The channels for sale are always in accordance with the custom of the trade.

The second advantage, therefore, of the N.P.O.S. is that it affords the means of securing a good and regular market for the depôt. Naturally, if the depôt finds a market near at hand, no such assistance may be necessary.

Other advantages obtained by branch membership of the N.P.O.S. are that the Central Society is in a far better position to deal with railway companies over the question of rates and packages, and to see that poultry keepers in any district combine for mutual benefit, and that they work together on similar lines, and also that they can obtain appliances, stock birds, etc., at special rates.

The Society, moreover, is in a position to find out from the trade in London and elsewhere what conditions are essential for the maintenance of the best prices, and consequently keep the depôts in touch with the market.

But, it is argued, how can we by such means compete with foreign prices, and the overwhelming quantities which come from abroad? The imports of eggs for 1900 amounted to 2,025,849,360, costing £5,406,020, and those of poultry £1,010,369, making a total value of £6,416,389. Most unfortunately, the Agricultural Returns do not comprise poultry, so that the present production of poultry and eggs in this country is a matter for speculation. It is computed to be worth about £7,000,000.

If each of the 90,000 farms to which I have alluded produced even 25,000 eggs, 2,250,000,000 fresh English eggs would be offered on the market, and if they each made £50 profit by poultry keeping, the additional income from this number of farms would amount to £4,500,000 a year.

Probably this amount would be lessened by competition, but we have certain facts to remember:—

(1) A large proportion of the eggs imported are not used for consumption, but for manufacture. Mr. Lewis Wright, in his *New Book of Poultry*, states

that about 840,000,000 of eggs are used annually in the United States of America in the calico printing, wine clarifying, book binding, glove making, and other trades. Although we do not know what is the consumption for these purposes in England, certainly much of our importation is not in competition with fresh eggs.

(2) Our own market is close at hand, whereas the majority of eggs from abroad cannot be delivered to this country in a fresh condition. If the patriotism of our people may be appealed to, and every consumer insists on the marking of eggs used for consumption, very little competition need be feared.

(3) The actual prices paid in London also indicate that for many years the home producer may have little to fear. That English eggs command a higher price on our markets, by reason of their quality and freshness, is an undoubted fact, but only where they are sold rapidly. Eggs are perishable, and the changes in specific gravity most rapid. Hence producers in this country, provided that they ensure that quickness of transit from the nest to the retailer's counter, which is essential, need not fear foreign supplies.

I am indebted to Mr. C. E. Brooke, past master of the Poulters Company of London, and head of the well-known firm of Messrs. Brooke Bros., of the London Central Market, for his kindness in giving me the comparative rates for eggs sold in Smithfield Market, for the twelve months ending November 3, 1901 (*see* Appendix II).

The prices for eggs vary from week to week, which explains the wide range in certain months. For instance, in October 1901 best English were quoted during the first week at 10*s.* 6*d.* to 12*s.*, and the last week of that month 13*s.* to 16*s.* 6*d.* From the figures given, it will be seen that the best grades of English eggs realize much the highest prices from August to March, but that in April, May and June, which form the period of glut, French obtain slightly better returns, doubtless due to the fact that whilst only the selected eggs are shipped from France, all the home supplies are placed on the markets. Hence the importance of poultry keepers making strenuous endeavours to increase production in the winter.

(4) Another fact to be borne in mind is the great change in food consumed by our people, who now require, by reason of altered conditions, a diet which is lighter, more easily assimilated, and yet highly nutritive, as compared with that seen upon the tables of our forefathers. As a consequence, the demand for eggs has enormously increased, and their value as an article of diet is more appreciated. It is estimated that the consumption of eggs in Britain in 1900 was an average of 110 per head of the population, of which at least half were foreign.

(5) Another fact to remember is that the spending power of the nation, and especially of the working classes, is much greater than was formerly the case. Eggs are used in a manner never contemplated fifty years ago.

The National Poultry Organization Society is as yet young, and sufficient time has not elapsed for the publication of many practical results. During the last year, however, six depôts have been systematically selling eggs in London branded with the Society's trade mark.

By the courtesy of the Committee of the Whitchurch (Dorset) Branch, I am enabled to give the balance sheet of their first year's working (*see* Appendix IV). This depôt is four miles from a railway station, and the majority of the shareholders are farmers. It will be noticed that the share capital only amounts to £20. The secretary and treasurer are honorary officers, but the collector is paid; for collecting, testing, packing and conveyance to the station, he receives the high payment of 1½*d.* per dozen. The producers are paid 3*d.* per dozen less than the sale price, which in this case averaged 1*s.* 1¼*d.* per dozen. The result has been that, after distribution of the surplus remaining at the end of the year, the producers have received from 1*d.* to 2*d.* per dozen more than they would otherwise have secured, and this is apart from profits by way of dividend.

My object in quoting the result so far achieved by one of these branches is to illustrate the practical work now being undertaken amongst farmers and others by the National Poultry Organization Society. In some other countries this work is encouraged by Government agency. It seems only right, therefore, that in this country, where voluntary effort is every-where the mainspring of action, a Society such as this should be accorded sympathy and help on the part of those who wish to see something practical done in aid of our struggling agriculture.

It is my hope that the facts given in these pages may have the effect of convincing many landowners and farmers of the advantages to be gained by the adoption of systematic poultry management on farms. I have endeavoured to point out that the initial difficulty is the general want of knowledge of the subject, and in procuring efficient poultry men. These two considerations are being gradually dealt with by the organization to be found in certain Colleges, and by the lectures now arranged by most of our County Councils.

No public money, however, in this country is available for promoting the organization for marketing, without which a larger production of eggs and poultry cannot meet the newer methods of competition from abroad, and this need is now being supplied by the recently formed National Poultry Organization Society.

In order that the statements and facts which I have given may be more readily accepted, Mr. R. H. Rew, Head of the Statistical Branch of the Board of Agriculture, has most kindly visited my farm, and allows me to state that he has carefully surveyed the methods and details, upon the accuracy of which I have based my argument. Mr. Rew, who is so well known in the Agricultural world, was for some time secretary of the Central Chamber of Agriculture, and on behalf of the Royal Commission on Agriculture, drew up the Report on the Poultry Fattening Industry at Heathfield, Sussex. I take this opportunity of expressing to him my sincerest thanks.

Appendix I

POULTRY ACCOUNTS OF KILBY'S FARM

Year ending September 29th, 1899

	£	s.	d.	£	s.	d.
Stock in hand, Sept. 29th, 1898:						
250 young chickens	35	5	0			
66 fowls	6	12	0			
24 ducks	3	12	0			
Appliances	60	13	0			
Foods	5	1	6			
				111	3	6
To purchases:						
Chickens	26	19	10			
Eggs	6	9	1			
Foods	98	16	0			
Fuel	3	0	0			
Oil	6	3	10			
Appliances and wood	25	8	4			
Sundries	20	8	10½			
				187	5	11½
Labour				63	19	8½
Farm produce consumed:						
Wheat Barley Milk Potatoes				10	9	4
Balance profit				33	17	6
				£406	16	0

	£	s.	d.	£	s.	d.
By sales:						
408 table chickens	65	14	3			
65 table ducks	11	12	0			
13,695 eggs	85	11	11			
Stock birds	7	15	0			
				170	13	2
Valuation, Sept. 29th, 1899:						
500 young birds	67	5	0			
140 fowls	14	0	0			
93 ducks	16	15	0			
Appliances	138	2	10			
				236	2	10
				£406	16	0

APPENDIX I

Year ending September 29th, 1900

	£	s.	d.	£	s.	d.
Stock in hand, Sept. 29th, 1899:						
Live stock	98	0	0			
Appliances	138	2	10	236	2	10
To purchases:						
Chickens	70	14	10½			
Ducks	1	12	9			
Hens	17	11	8			
Eggs	7	12	3			
Foods	106	8	9			
Fuel	3	0	0			
Oil	9	18	6			
Appliances and wood	45	2	8½	262	1	6
Labour				99	2	10
Rent of buildings	20	0	0			
Rent of Pasture used for pens	5	0	0	25	0	0
Farm produce consumed:						
Wheat	24	6	0			
Beans	1	12	0			
Oats	3	12	0			
Swedes and Mangolds	1	4	0			
Potatoes	3	10	0			
Milk	11	14	8	45	18	8
Balance profit				68	5	6½
				£736	11	4½

	£	s.	d.	£	s.	d.
By sales:						
1,010 table chickens	160	7	0			
83 table ducks	18	11	3			
30,520 eggs	135	1	10½			
131 hens	9	16	6			
Stock birds	10	5	8			
Sundries	2	16	3	336	18	6½
Valuation Sept. 29th, 1900:						
1,393 young birds	174	2	6			
169 fowls	21	2	6			
60 ducks	8	19	0			
Appliances	187	16	10			
Foods	7	12	0	399	12	10
				£736	11	4½

APPENDIX I

Year ending September 29th, 1901

	£	s.	d.	£	s.	d.
Stock in hand, Sept. 29th, 1900:						
Live stock	204	4	0			
Appliances	187	16	10			
Foods	7	12	0	399	12	10
To purchases:						
760 Chickens	95	5	5			
7 Ducks	0	17	0			
Hens and stock birds	14	3	10			
Eggs	11	9	0			
Foods	184	17	5			
Fuel	10	5	0			
Oil	8	0	0			
Appliances and wood	119	11	11			
Sundries	14	16	2	459	5	9
Labour				133	15	2
Rent of buildings	20	0	0			
Rent of pasture used for pens	5	0	0	25	0	0
Farm produce consumed:						
20 sacks wheat	15	0	0			
8 sacks oats	4	0	0			
Swedes and mangolds	1	4	0			
Potatoes	2	2	0			
1,344 gallons Milk	22	8	0	44	14	0
Balance profit				83	12	9½
				£1,146	0	6½

	£	s.	d.	£	s.	d.
By sales:						
1,325 table chickens	229	8	8			
150 table ducks	28	2	6			
35,086 eating eggs	169	7	2			
1,426 setting eggs	24	2	5			
Stock birds	39	11	0½			
Sundries	8	7	9	498	19	6½
Valuation, Sept. 29th, 1901:						
1,723 young birds	256	19	0			
261 fowls	28	19	6			
34 ducks	4	12	6			
Houses and appliances (see detailed list)	350	0	0			
Foods	6	10	0	647	1	0
				£1,146	0	6½

APPENDIX I

VALUATION OF POULTRY HOUSES AND APPLIANCES

September 29th, 1901

	£	*s.*	*d.*
4 incubators	14	0	0
10 foster-mothers 91 coops 13 runs	44	14	0
42 houses 14 shelters	190	10	0
9 fattening pens	5	0	0
5 Spratt's cages	1	0	0
14 wicker baskets	2	10	0
52 nest boxes	2	10	0
100 drinking troughs	3	0	0
72 hurdles	6	0	0
Wire netting	8	0	0
Parish's cooker	7	0	0
Refrigerator	1	10	0
Safe	0	10	0
Sundry wood and carpenters' tools	10	0	0
Bone grinder	4	0	0
2 open Furnaces	6	0	0
Sundry buckets and tubs	5	6	0
Cramming machine	3	0	0
Corn bins	3	10	0
Wire runs	26	0	0
Additions to old buildings not fixtures	6	0	0
	£350	0	0

Appendix II

PRICES OF EGGS

Per great hundred (120)

Month.	Grade.	English.	French.	Hungarian.	Italian.
		s. *d.* *s.* *d.*	*s.* *d.* *s.* *d.*	*s.* *d.* *s.* *d.*	*s.* *d.* *s.* *d.*
December, 1900	Best	15 0 to 19 0	14 6 to 15 0	10 3 to 10 9	13 0 to 14 0
	Seconds	12 6 ,, 16 6	10 6 ,, 14 6	7 6 ,, 7 9	11 3 ,, 13 3
January, 1901	Best	13 0 ,, 18 0	11 0 ,, 14 0	9 9 ,, 10 9	10 9 ,, 14 0
	Seconds	11 6 ,, 15 0	10 0 ,, 12 0	7 3 ,, 8 3	9 9 ,, 13 0
February	Best	11 0 ,, 14 0	11 0 ,, 11 6	9 6 , 9 9	10 9 ,, 11 3
	Seconds	10 0 ,, 11 0	9 6 ,, 10 6	7 3 ,, 7 6	9 9 ,, 10 6
March	Best	7 6 ,, 12 0	8 9 ,, 9 9	7 6 ,, 8 3	8 9 ,, 9 9
	Seconds	7 0 ,, 9 0	7 3 ,, 9 0	6 6 ,, 7 0	7 9 ,, 9 0
April	Best	7 0 ,, 8 6	8*s.* 9*d.*	7*s.* 6*d.*	8*s.* 3*d.*
	Seconds	6 6 ,, 7 0	7 3 to 7 6	6*s.* 3*d.*	7*s.* 9*d.*
May	Best	6 6 ,, 8 0	8 0 ,, 8 3	6 6 to 7 3	8 0 to 8 6
	Seconds	6 6 , 7 0	7 0 ,, 7 6	5 6 ,, 6 9	6 9 ,, 8 0
June	Best	6 6 ,, 9 0	8 0 ,, 9 6	6 0 ,, 7 0	8 0 ,, 8 6
	[1] Seconds	— —	7 0 ,, 8 9	5 3 ,, 5 6	7 0 ,, 8 0
July	[2] Best	9 0 ,, —	9 6 ,, 10 6	6 6 ,, 7 0	8 0 ,, 8 3
	Seconds	8 0 ,, —	8 0 ,, 8 9	5 3 ,, 5 6	7 0 ,, 7 6
August	Best	9 0 ,, 13 6	10 0 , 11 6	7 3 ,, 9 9	8 3 ,, 11 3
	Seconds	7 0 ,, 10 0	8 6 ,, 10 6	5 7½ ,, 7 6	7 9 ,, 10 6
September	Best	9 6 ,, 12 6	10 6 ,, 11 6	7 9 ,, 8 3	8 9 ,, 9 0
	Seconds	7 6 ,, 10 0	9 3 ,, 9 6	6 0 ,, 6 6	7*s.* 9*d.*
October	Best	10 0 ,, 16 6	10 9 ,, 12 0	8 0 ,, 9 0	8 9 to 11 0
	Seconds	8 3 ,, 14 0	9 0 ,, 11 0	6 6 ,, 6 10½	7 6 , 10 0
November	Best	15 0 ,, 20 0	10 9 ,, 14 6	8 3 ,, 9 9	8 6 ,, 12 0
	[1] Seconds	— —	9 0 ,, 12 6	6 6 ,, 7 9	8 0 ,, 11 3

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[1] No prices for English Seconds are stated in June and November.

[2] Prices for the latter weeks of July are not stated for English.

Appendix III

POULTRY MANURE

For the purpose of ascertaining for ourselves this product of poultry keeping, Mr. Parham carried out the following experiments.

For 31 hens in one of the houses in the fields from 6 p.m. to 7 a.m., the droppings amounted to 4 lb. 10 oz. The birds were a cross between Brown Leghorn and Buff Orpington and of an average age of 9 months. This amount works out at rather over 54 lb. per bird per annum.

Six of these birds were shut up during the day, and gave 4½ oz., which works out at the rate of 17 lb. per bird per annum.

The result of two nights taken together amounted to 8 lbs. 11 oz., a less average result than that of the one night, which is accounted for by that of the first night having partly dried.

The weight from 11 birds in the fattening pens taken for 48 hours was 6 lb. 15 oz., which works out at the rate of 115 lb. per bird per annum.

ANALYSIS OF DRIED MANURE (POULTRY) MADE BY DR. AUGUSTUS VOELCKER & SONS, JUNE 28TH, 1900.

Moisture	18·88
* Organic matter and ammoniacal salts	48·58
† Phosphoric acid	3·67
Lime	2·17
Magnesia, ‡ Alkaline salts, etc.	5·23
Sand	21·47
	100·00
* Containing nitrogen	5·73
Equal to ammonia	6·95
† Equal to phosphate of lime	8·01
‡ Containing potash	1·81

NOTE.—The above was manure taken from fattening birds, and would be higher in value than from ordinary fowls.

Appendix IV

WHITCHURCH (DORSET) DEPÔT, NATIONAL POULTRY ORGANIZATION SOCIETY

Balance Sheet for year ending September 30th, 1901

CASH STATEMENT.

Dr.	£	*s.*	*d.*	£	*s.*	*d.*
To share capital :						
78 shares fully paid, at 5/-	19	10	0			
4 shares half paid, at 2/6	0	10	0			
				20	0	0
,, Members' subscriptions :						
(1900) 24 at 1/-	1	4	0			
(1901) 10 at 1/-	0	10	0			
				1	14	0
,, 25 members' number stamps at 6*d.* . .				0	12	6
,, 61,557 eggs sold, Nov. 1900 to Sept. 30th, 1901				298	5	8½
				£320	12	2½

Cr.	£	*s.*	*d.*	£	*s.*	*d.*
By Egg boxes and appliances				12	8	9
,, Affiliation fees (7*s.* paid in advance). . . .				1	1	0
,, Members for eggs to Aug. 31st, 1901	208	7	2¾			
,, Do., do., Sept. (unpaid) .	18	18	10½			
				227	6	1¼
,, Carriages and commission				47	1	5
,, Postages, etc. .				2	1	2½
,, Sundry payments . .				0	16	8
,, Profits divided, Dec. 31st, 1900 . . .				5	15	4
,, Cash in hand, Sept. 30th, 1901 . . .				24	1	8¾
				£320	12	2½

PROFIT AND LOSS ACCOUNT.

Dr. ASSETS.	£	*s.*	*d.*	£	*s.*	*d.*
To Cash on hand, Sept. 30th, 1901				24	1	8¾
,, Profits divided, Dec. 31st, 1900				5	15	4
,, Egg boxes and appliances	12	8	9			
Less depreciation. .	2	9	3			
				9	19	6
,, Supplies on hand . .				1	7	6
,, Affiliation fee, paid in advance . . .				0	7	0
,, Book debts . .				18	18	10½
				£60	9	10¼

Cr. LIABILITIES.	£	*s.*	*d.*	£	*s.*	*d.*
By Share capital . .				20	0	0
,, Creditors unpaid :						
Members for eggs . .	18	18	10½			
Printing and supplies .	2	2	6			
				21	1	4½
,, Balance net profit for year				19	8	5¾
				£60	9	10¼

BALANCES ACCOUNT.

Dr.	£	*s.*	*d.*
To Balance profit and loss account . . .	19	8	5¾
	£19	8	5¾

Cr.	£	*s.*	*d.*
By profits divided, Dec. 30th, 1900	5	15	4
,, Balance carried to working capital .	13	13	1¾
	£19	8	5¾

Appendix V

LIST OF POULTRY BOOKS

By STEPHEN BEALE.
  "Profitable Poultry Keeping."
By EDWARD BROWN, F.L.S.
  "Poultry Keeping as an Industry for Farmers and Cottagers."
  "Industrial Poultry Keeping."
  "Pleasurable Poultry Keeping."
By E. COBB, F.Z.S.
  "Poultry Farming Up-to-date."
  "Housing and Management of Stock."
  "Feeding and Rearing of Chickens."
  "Fattening Fowls."
By the Late ALEX. COMYNS, B.A., LL.B.
  "Poultry for the People."
By WILLIAM COOK.
  "Ducks, and How to Make Them Pay."
  "Poultry Breeder and Feeder."
By ERNEST EVANS.
  "The Biology of Poultry Keeping."
By J. WOODROFFE HILL, M.R.C.V.S.
  "Diseases of Poultry."
By F. A. McKENZIE.
  "Profitable Poultry-Keeping for Amateurs."
By J. H. SUTCLIFFE.
  "Artificial Incubation and Its Laws."
By W. B. TEGETMEIER, F.Z.S.
  "Table and Market Poultry."
By FRED. V. THEOBALD, M.A., F.E.S.
  "The Parasitic Diseases of Poultry."
By W. VALE.
  "Profitable Poultry: How to Manage Fowls, Turkeys, Ducks and Geese in Health and Disease."
By MISS E. WATTS.
  "The Poultry Yard" (Revised Edition).
By LEWIS WRIGHT.
  "The New Book of Poultry."
  "Practical Poultry Keeper."
By RICHARD W. WEBSTER.
  "The Management of Poultry."

Butler & Tanner, The Selwood Printing Works, Frome, and London.